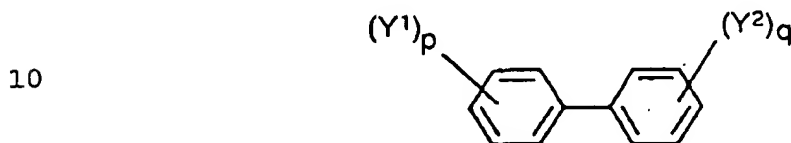


WHAT IS CLAIMED IS:

1. A non-aqueous electrolytic solution which comprises a non-aqueous solvent and an electrolyte which  
5 further contains 0.001 to 0.8 weight % of a biphenyl derivative having the following formula:



- 15 in which each of  $Y^1$  and  $Y^2$  independently represents a hydroxyl group, an alkoxy group, a hydrocarbyl group, a hydrogen atom, an acyloxy group, an alkoxycarbonyloxy group, an alkylsulfonyloxy group or a halogen atom, and each of  $p$  and  $q$  independently is an integer of 1 to 3.

- 20 2. The non-aqueous electrolytic solution of claim 1, wherein the biphenyl derivative has the following formula:



- 30 in which  $Y$  represents a hydroxyl group, an alkoxy group, a hydrocarbyl group, a hydrogen atom, an acyloxy group, an alkoxycarbonyloxy group, or an alkylsulfonyloxy group.

- 35 3. The non-aqueous electrolytic solution of claim 1, wherein the amount of the biphenyl derivative is in the range of 0.01 to 0.5 weight %.

4. The non-aqueous electrolytic solution of claim 2, wherein the amount of the biphenyl derivative is in the range of 0.01 to 0.5 weight %.

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5. The non-aqueous electrolytic solution of claim 1, wherein the non-aqueous solvent comprises a combination of a cyclic carbonate and a linear chain carbonate.

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6. The non-aqueous electrolytic solution of claim 2, wherein the non-aqueous solvent comprises a combination of a cyclic carbonate and a linear chain carbonate.

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7. The non-aqueous electrolytic solution of claim 1, wherein the non-aqueous solvent comprises a high dielectric constant solvent which is selected from the group consisting of ethylene carbonate, propylene carbonate, and butylene carbonate, and a low viscosity solvent which is selected from the group consisting of dimethyl carbonate, methyl ethyl carbonate, diethyl carbonate, tetrahydrofuran, 2-methyltetrahydrofuran, 1,4-dioxane, 1,2-dimethoxyethane, 1,2-diethoxyethane, 1,2-dibutoxyethane,  $\gamma$ -butyrolactone, acetonitrile, methyl propionate, and dimethylformamide.

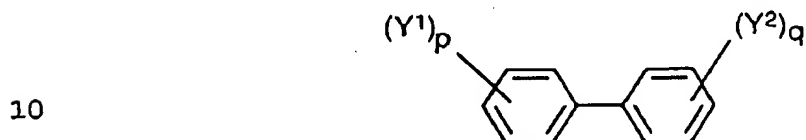
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8. The non-aqueous electrolytic solution of claim 2, wherein the non-aqueous solvent comprises a high dielectric constant solvent which is selected from the group consisting of ethylene carbonate, propylene carbonate, and butylene carbonate, and a low viscosity solvent which is selected from the group consisting of dimethyl carbonate, methyl ethyl carbonate, diethyl carbonate, tetrahydrofuran, 2-methyltetrahydrofuran, 1,4-dioxane, 1,2-dimethoxyethane, 1,2-diethoxyethane, 1,2-dibutoxyethane,  $\gamma$ -butyrolactone, acetonitrile, methyl propionate, and dimethylformamide.

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9. A lithium secondary battery comprising a positive electrode, a negative electrode, and a non-aqueous electrolytic solution which comprises a non-aqueous solvent and an electrolyte which further contains 0.001 to 0.8 weight % of a biphenyl derivative having the following formula:



- in which each of  $Y^1$  and  $Y^2$  independently represents a hydroxyl group, an alkoxy group, a hydrocarbyl group, a hydrogen atom, an acyloxy group, an alkoxycarbonyloxy group, an alkylsulfonyloxy group or a halogen atom, and each of  $p$  and  $q$  independently is an integer of 1 to 3.

10. The lithium secondary battery of claim 9, wherein the biphenyl derivative in the non-aqueous electrolytic solution has the following formula:



- in which  $Y$  represents a hydroxyl group, an alkoxy group, a hydrocarbyl group, a hydrogen atom, an acyloxy group, an alkoxycarbonyloxy group, or an alkylsulfonyloxy group.